

**CLAIMS**

What is claimed is:

1. In a skyline logging carriage apparatus comprising a chassis with an internal combustion power plant, a main hydraulic pump with variable volume output driven by said power plant, a hydraulic motor driven by said main hydraulic pump and a sheave assembly driven by said hydraulic motor to move a logging skidline, the improvement comprising an electronic control system with a rotational rate sensor for said power plant and a main hydraulic pump volume output controller coupled to said rotational rate sensor.
2. In a skyline logging carriage apparatus, with an internal combustion power plant and a main hydraulic pump driven by said power plant, the method of controlling said power plant's rotational rate by adjusting the output volume of said main hydraulic pump in response to a change of load on said main hydraulic pump.
3. A remotely controlled slack pulling carriage for movement along a suspended cable which comprises:
  - A chassis containing an internal combustion power plant, and
  - An electrical system which comprises a battery, electric starter and alternator for starting and operation of said power plant, and
  - A main hydraulic pump with variable displacement, mechanically driven by said power plant, and which is, in-turn, connected to a hydraulic motor in a closed hydraulic loop, and

- 5 A secondary hydraulic pump, smaller than the main hydraulic pump,  
for pumping hydraulic fluid into a solenoid control manifold, and
- A sheave pressure roller assembly and controlling actuator to bring  
sheave pressure roller assembly in or out of contact with an opposing  
sheave roller, to effectively allow the drivetrain to feed or disengage  
10 feed to a skidline cable, and
- A skyline cable clamp assembly and controlling actuator to clamp or  
un-clamp said carriage to a skyline cable, and
- A skidline cable clamp assembly and controlling actuator to clamp or  
un-clamp said carriage to a skidline cable, and
- 15 A radio subsystem that facilitates remotely controlling said carriage,  
and
- An electronic control subsystem located within said carriage for  
performing control of said power plant and for performing control of  
said main hydraulic pump, and for performing control of sheave  
20 pressure roller actuator, and for performing control of said skyline cable  
clamp actuator, and for performing control of said skidline cable clamp  
actuator, and
- A rotational rate sensor that facilitates detection by said electronic  
control of the rotational rate of said power plant.
- 25 4. The remotely controlled carriage of Claim 1 whereby the intended  
application is skyline logging operations.
5. The remotely controlled carriage of Claim 1 that utilizes an electrically  
controlled, proportional output hydraulic pump.
6. The remotely controlled carriage of Claim 5 that utilizes a hydraulic-pilot  
30 controlled, proportional output hydraulic pump.
7. The remotely controlled carriage of Claim 1 that incorporates a swiveling  
hydraulic fluid pick-up tube that facilitates fluid pick-up when operating

- 5           said carriage at extreme angles.
8. A remotely controlled drum carriage for movement along a suspended cable whereby the intended application is skyline logging operations, which comprises:
- 10           A chassis containing a power plant, and
- An electrical system which comprises a battery, electric starter and alternator for starting and operation of said power plant, and
- A main hydraulic pump with variable displacement, mechanically driven by said power plant, and which is, in-turn, connected to a hydraulic motor in a closed hydraulic loop, and
- 15           A secondary hydraulic pump, smaller than the main hydraulic pump, for supplying pressurized hydraulic fluid to a solenoid-controlled selective distribution manifold, and
- A cable drum assembly driven by said hydraulic motor, and
- A skyline cable clamp assembly and controlling actuator to clamp or
- 20           un-clamp said carriage to a skyline cable, and
- A skidline cable clamp assembly and controlling actuator to clamp or un-clamp said carriage to a skidline cable, and
- A radio control system that facilitates remotely controlling said carriage, and
- 25           An electronic control system for performing control of said power plant and for performing control of said main hydraulic pump, and for performing control of said skyline cable clamp actuator, and for performing control of said skidline cable clamp actuator, and
- A rotational rate sensor that facilitates detection by said electronic
- 30           control of the rotational rate of said power plant.
9. The remotely controlled carriage of Claim 6 that utilizes an electrically

- 5 controlled, proportional output hydraulic pump.
10. The remotely controlled carriage of Claim 6 that utilizes a hydraulic-pilot controlled, proportional output hydraulic pump.
11. The remotely controlled carriage of Claim 6 that incorporates a swiveling hydraulic fluid pick-up tube that facilitates fluid pick-up when operating
- 10 said carriage at extreme angles.